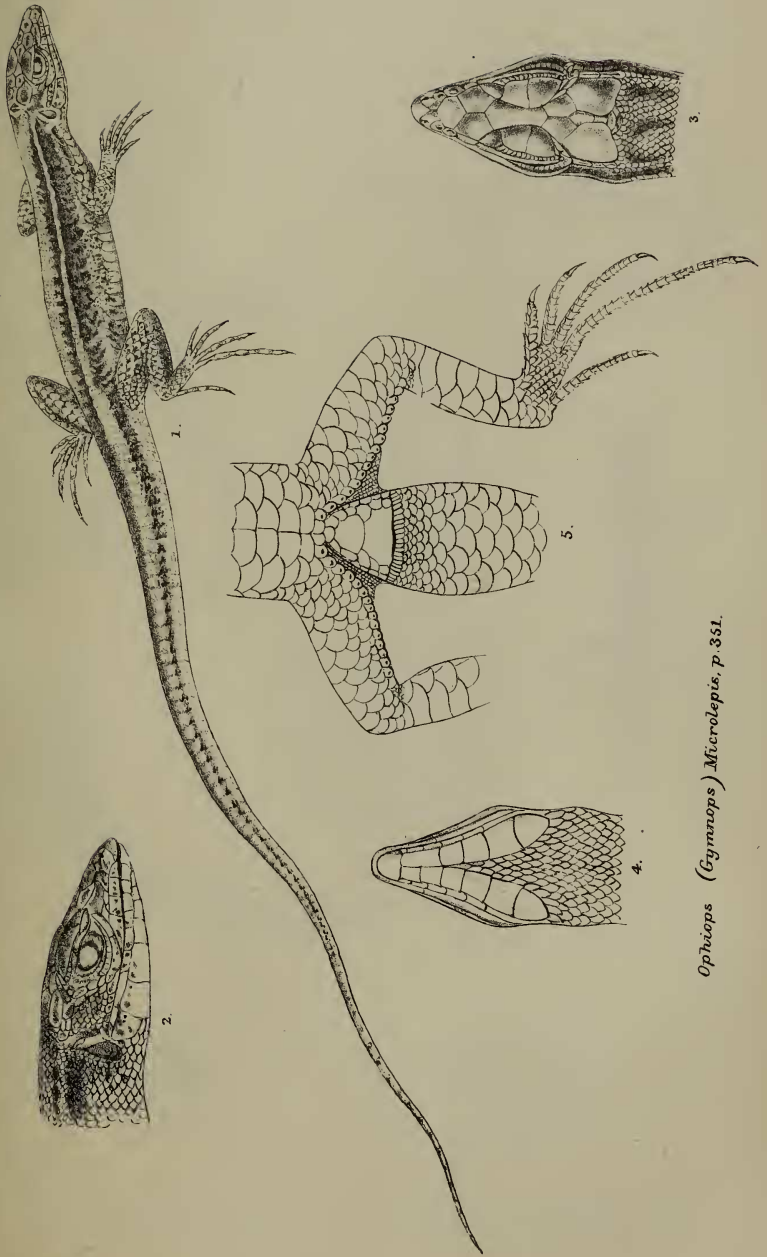
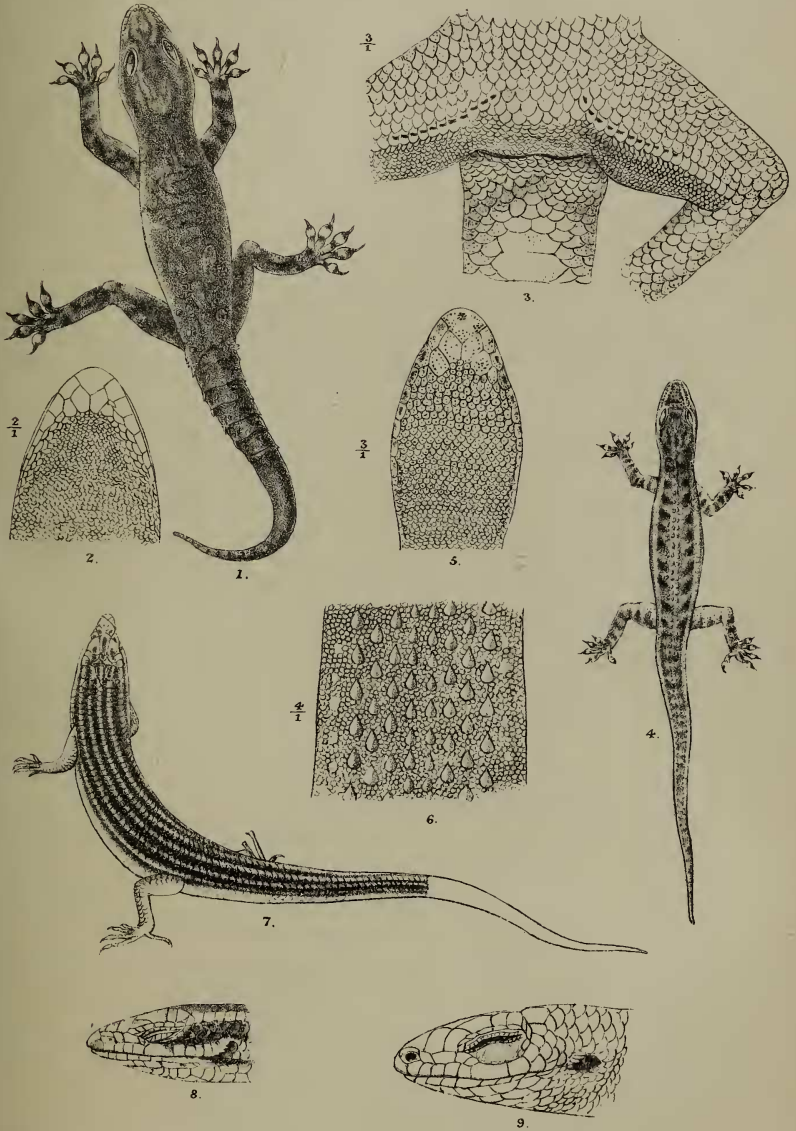


*Pangshura tectum* (Bell) var. *intermedia*, see p. 339



*Ophiops (Gymnops) Microlepis*, p. 351.



1.3 *Hemidactylus marmoratus*, p. 363.  
4.6. " *gracilis*, p. 362.

7.8. *Euprepes septemlineatus*, p. 360.  
9. " *innolatus*, p. 354.

NOTES ON SOME REPTILIA AND AMPHIBIA FROM CENTRAL INDIA,—  
by WILLIAM T. BLANFORD, F. G. S., C. M. Z. S., &c.

(With plates XIV—XVI.)

[Received 2nd August, read 3rd September, 1870.]

A collection, chiefly of Reptilia, made by me during the cold and hot seasons of 1869-70 in a part of India hitherto but little explored by herpetologists, contains several interesting forms, and a few lizards which appear to have been previously undescribed. My principal object in collecting has been to obtain somewhat more exact information as to the range of different species, a subject in which, as was pointed out by G ü n t h e r in his Reptiles of British India, very much remains to be done. I was at first struck by the herpetological provinces into which Dr. G ü n t h e r has divided Peninsular India, and which differ greatly from those which appeared to me, from a study of the landshells, birds and mammals, to be the great natural zoological divisions of the country, and I wished, before publishing any observations on the subject, to ascertain, to some extent at least, whether the distribution of the Reptilia differs in any way from that of the other groups upon which I had founded my conclusions.

I soon became satisfied that it does not, and that Dr. G ü n t h e r was misled by the very imperfect information available in Europe, and especially by the confused ideas which have hitherto prevailed as to the affinities of the Indian fauna. It is naturally very difficult for any one unacquainted with a country to form a correct opinion of its physical geography, and of the distribution of its fauna as affected by physical characters. Another very great difficulty is correctly to appreciate the comparative value of the evidence before the compiler. In such matters local knowledge is essential. It should also be borne in mind that, until recently, the importance of accuracy in determining the exact localities of specimens, brought from distant parts of the world, was not appreciated by European naturalists, indeed it is to be feared that many scarcely appreciate it even now, and that the labels in European Museums are but too often misleading. A naturalist in Europe must depend entirely

upon the information supplied to him by others, whilst a local observer can largely supplement and correct the observations of other men.

I think that it adds greatly to the probability of my own views to find that the localities of certain Reptilia which were quoted by Günther in his Reptiles of British India, and which appeared opposed in a very marked manner to the conclusions at which I had arrived, have lately been shewn by Dr. Jerdon\* to be erroneous. Amongst the most anomalous of these were the supposed occurrence of an *Acanthodactylus* at Coonoor on the Nilgiris and some of the localities given by Dr. Günther on the authority of the Messrs. Schlagintweit, such for instance as the occurrence of *Eryx Johnii* at a height of 9800 feet in Sikkim! † This last assertion I had noted in my copy of Günther's Reptiles as incredible before I saw Dr. Jerdon's remarks, a circumstance I think worth mentioning as it shews that, probably from a different line of argument, both Dr. Jerdon and I had arrived at the same conclusion.

It is impossible for me here to enter at full length into the subject of the geographical distribution of the Indian fauna, but the following short sketch will serve to shew its outlines. ‡

I divide Peninsular India with Ceylon, from Biluchistan to a line drawn to the north from the head of the Bay of Bengal, and including all south of the Himalayas, but excluding the mountains themselves, into the following principal divisions. The boundaries of all require more exact determination.

1. The Punjáb province, including, besides the Punjáb itself, Sind, the desert country east of the Indus, Cutch and probably western Rájputana. The fauna, with a few exceptions, is of the desert types.

2. The Indian province proper. This includes all India§ east of Delhi and Katthiawar as far as the Rájmahál hills, and the whole

\* Proc. As. Soc. Bengal, 1870, pp. 77 and 79.

† Günther Rept. Brit. India, p. 335.

‡ I mentioned a few of the principal distinctions in a paper, read before the British Association at Exeter in 1869. Vide Rept. Brit. Assn. 1869, p. 107.

§ I employ the word India as meaning solely the country of the Hindus, from whom it derives its name. All the countries to the East of the Bay of Bengal differ to a most important extent in climate, zoology, botany, and eth-

Peninsula south of the Ganges with the exception of the western coast, and probably a few scattered hills in Southern India. It also includes Northern Ceylon. It is thus subdivided roughly.

*a.* Gangetic sub-province or Hindustán ;\*—extending south as far as the Nerbudda ; in its eastern portion comprising only the valley of the Son and the Ganges valley as far east as Benares.

*b.* Deccan sub-province ;—from the Nerbudda to the Krishna (Kistna), bounded on the west by a line drawn parallel to the west coast a little east of the main range of the Western Ghats, and on the east by a line drawn nearly north and south a little east of Nágpúr. I comprise in this for the present Katthiawar, Gujerat and Khandeish.

*c.* Bengal sub-province ;—bounded by the last on the east and extending to the south at least as far as the Godavery, perhaps to the Krishna. I believe that the Gangetic valley east of Benares should be included, but on this point, as on many others, I have no certain information. This sub-province contains a few well marked Malayan forms not met with in the other two.

*d.* Madras sub-province ;—all the peninsula south of the Krishna and east of the Nilgiris and other hill ranges forming the Western Ghats. The tops of such hill ranges as the Shevroys, Kolamullays, &c. appear, however, rather to belong to the Malabar province. This Madras sub-province also comprises Northern Ceylon.

3. The Eastern Bengal Province. This perhaps should be classed with the Indo-Chinese countries. Malay forms prevail.

nology. European naturalists I know object to this definition of the term, and prefer using the name in its old vague sense, and Dr. Günther appeals to the practice of centuries, (*Zool. Rec.* for 1868, p. 118). But I am sure that when the fauna of India is better known, all naturalists will see the necessity of using one word for the country, and of avoiding all risk of confounding it with the very different Indo-chinese and Malay province, and Dr. Günther's argument is open to a very obvious reply, viz. that Zoology is not the only branch of human knowledge which has improved since mediæval times and in which the necessity for accuracy in definition has become apparent, and that geographers will be scarcely satisfied with the argument that some centuries ago all Eastern Asia was known as India, and therefore the old nomenclature should be retained. Besides if we must go back three or four centuries for our geographical nomenclature, we shall be obliged to include America as part of the "Indies," and Brazil as part of the "East Indies."

\* The word Hindustán is commonly employed by Europeans as signifying the whole of India. By natives of India it is used to designate the upper Gangetic plain only.

Calcutta is just on the edge of it, and may be rather placed inside it than outside; Assam and Cachar beyond our limits belong to it.

4. The Malabar province with Southern Ceylon. This, although far from thoroughly explored, has the richest and most interesting fauna of all. It comprises the Western Coast about as far north as Bombay, and the range of hills which runs parallel to that coast from Cape Comorin probably as far as the river Taptee. Its fauna is in part peculiar, but its affinities are distinctly Malayan, and this is the more interesting, because it is divided from the Eastern Himalayas and Eastern Bengal, the nearest countries in which Malay types are prevalent, by the whole breadth of the Indian province with its semi-African fauna.

I can only mention a few of the more marked Reptilia and Amphibia of each province. Some species range throughout, but they are very few. The lists are very imperfect for want of accurate information.

Punjab province. *Pangshura Smithii*, *Psammosaurus scincus*, *Acanthodactylus Cantoris*, *Sphenocephalus tridactylus*, *Eublepharis macularius*, *E. fasciatus*, *Uromastix*, *Trapelus* sp., *Agama agilis*, *Chamæleo ceylonicus*, *Zamenis diadema*, *Echis carinata*.

Indian province. *Testudo elegans*, *Pangshura tectum*, *Cubrita* (the genus), *Pseudophiops Jerdoni*, *Euprepis trilineatus*, *E. Beddomei*, *E. trivittatus*, *Eumeces Hardwickii*, *Sitana*, *Charasia*, *Chamæleo ceylonicus*, *Zamenis brachyurus*, *Eryx Johnii*, *Daboia Russellii*, *Echis carinata*, *Pyxicephalus breviceps*, *Cacopæus*.

Eastern Bengal province. *Emys Hamiltonii*, *Pangshura sylhetensis*, *Simotes bicatenatus*, *Tragops prasinus*. I am unable to say how far to the westward several Indo-Chinese forms such as *Tachydromus* and *Pseudopus gracilis* extend, but I believe they may fairly be considered as part of the fauna of this province. If the base of the Himalayas be included, the number of Malay forms will be greatly increased.

Malabar province. *Ateuchosaurus travancoricus*, *Gymnodactylus*, several species, *Draco Dussumieri*, *Otoeryptis*, *Lyriocephalus*, *Ceratophora*, *Cophotis*,\* *Calotes nemoricola*, *C. Rouxii*, *C. nigrilabris*,

\* These four genera are hitherto peculiar to Ceylon, but like many other Ceylon forms may very possibly be hereafter found in the hills of Malabar, which have as yet been only very imperfectly explored, many parts of them being singularly difficult of access.

*C. Elliotti*, *Salea*, *Liolepis guttatus* (in India); the family of *Uropeltidæ*; the family of *Calamaridæ* except *Falconeria*, *Theob.*, (found also in Assam and the Malay countries but with the exception quoted, not out of this province in India); *Oligodon*, *Simotes venustus* and some other species; *Ablabes olivaceus*, *A. Humberti*, *Cynophis*, *Tropidococcyx*, *Tragops dispar?* *Dipsas Forsteni*, *Cercaspis*, *Calophis nigrescens*, *Trimeresurus anamulliensis*, *T. strigatus*, *T. trigonocephalus*, *Peltopelor*, *Hypnale*, *Hylorana malabarica* and two or three other species, *Ixalus*, several species, *Rhacophorus malabaricus*; *Epicrion* and *Cecilia* (in India proper).

It is quite possible that some of the species mentioned may extend into other districts; a few certainly do, but I think not to a sufficient extent to prevent their being fairly characteristic species. Thus *Daboia Russellii* occurs in Pegu, but this is quite in accordance with some other peculiarities in the fauna of the Irawady valley, especially in upper Pegu and Ava, where many Indian animals are found which are unknown in the intervening country of Arakan.

The main object of the following notes is to give accurate localities for all the species named, and thus to contribute slightly to a knowledge of the distribution of particular species. As the collection was made in the dry season, and in great measure during rapid marches, the snakes and amphibia, which are chiefly seen in the rains, are very poorly represented. My reason for mentioning some very common and widely spread forms is, that I have found that such have frequently well marked limits within India itself, and it is very desirable to ascertain such boundaries, which can only be done by each collector giving the precise district in which he found specimens.

## REPTILIA.

### CHELONIA.

#### 1. EMYS [PANGSIHURA] TECTUM, Bell., var. *intermedia*. Pl. XIV.

This form is nearly or quite as high in the dorsal ridge as *P. tectum* from Bengal. The ridge appears merely as a blunt keel on the two first vertebral shields, but rises into a strong nodose promi-



nence on the third. The feet are much flatter, and the toes longer and more broadly webbed than in *P. tectum*, and the form of the vertebral plates differs from the type. In coloration and in many other characters, it closely approaches G ü n t h e r ' s description of *P. tentoria*, but it is more tumid and the vertebral plates have a different form.

*Plates.* Nuchal plate short, trapezohedral, broader behind than in front. First vertebral subquadrangular, very little broader in front than it is behind, the anterior margin convex, posterior slightly concave, lateral margins sinuate. Second vertebral almost hexagonal, the breadth exceeding the length slightly, the posterior margin straight, thus differing from both typical *tectum* and *tentoria* in which it is convex. Third vertebral longer than broad, pentagonal, pointed behind, the anterior margin nearly straight and equal in length to either of the front lateral margins, or slightly exceeding them. Fourth diamond shape, rather attenuate in front and rounded or subtruncate behind; fifth twice as broad as the anterior margins of the two caudals. Caudals rather broader behind than in front, in breadth at their posterior margin about equal to their length, they are very little smaller than the nearest marginals, and are separated from each other by a very slight notch. Posterior margin of upper shell very slightly serrated. Sternum flat, slightly bent upwards in front, keeled at the sides; width between the inguinal incisions less than half the length. Suture between the gular plates shorter than that between the postgulars. Pectorals longer than the postgulars and not much shorter than the abdominals and præanals. Suture between the anals longer than their posterior margins, which meet at an obtuse angle. Jaws finely denticulated, the upper not emarginate in front. Tail short, shorter than the head. Feet broadly webbed, very flat, front of fore leg down to the base of the first toe, and hinder part of hind leg nearly covered by broad horny scales, hind margin of fore foot also covered with large scales; claws of moderate size.

*Coloration.* Carapace above brown, anterior and lateral margins of plates a little paler. Sternal plates black, anterior and lateral margins, but not the posterior ones, yellow. Limbs and head dull olive, paler below, the first unspotted, in this differing conspicuously from

Bengal specimens of *P. tectum*, in which they are spotted with yellow. There is a ferruginous spot behind each eye, and three others, less well marked, in a convex line on the occiput.

I obtained three specimens of this form, the following are the measurements of their carapaces in inches.

	Length.	Breadth.	Height.
1,	4	3.2	2.
2,	3.5	2.7	1.75
3,	3 6	2 7	1.8

*Loc.* All the specimens were procured at Chappa and Korba in Biláspúr, on the Hasdo river, a tributary of the upper Mahanaddi which it joins above Sambhalpúr. I had named the *Pangshura* above described, and intended publishing it as a separate species, when some specimens from the Jumna river near Agra sent by Mr. Carlleyle to the Indian Museum were shewn to me by Dr. Anderson. These agreed remarkably with my specimens in the coloration of the head and limbs, whilst the vertebral plates shewed an intermediate form between the Biláspúr and Bengal tortoises. This induced me to re-examine the fine series of specimens of *P. tectum* in the Indian Museum, and I found that although none have vertebral plates of the same form as the Biláspúr specimens, there is considerable variation, and the changes due to age are much greater than I had at first supposed, or than previous describers seem to have been aware of, and that a certain amount of change takes place in the sternal plates also. Under these circumstances, I doubt if the coloration of the head and limbs alone can be considered sufficiently important characters to justify specific distinction. In *P. tectum* from Bengal the head appears always to be black in the centre above and red or yellow at the sides, and the limbs to be spotted with yellow.

In young animals from Bengal and frequently in larger specimens up to about 4 inches in length, the first vertebral is pentagonal with straight sides, and much narrower behind than in front. But in old shells I find that the sides become curved as in the Agra and Biláspúr examples, and that the difference between the breadth in front and behind diminishes. The second vertebral increases in breadth with age, and although it has never in Calcutta carapaces

so broad a straight hinder margin as in the specimens from central India, the extent to which it is truncated behind in young animals varies. In the third vertebral a great change also takes place with age, while the fourth in old shells loses its diamond shape and assumes the outline of a flask. In the sternum, the pectoral shields become shorter in older specimens, in proportion to the postgulars and abdominals, and the angular ridge on each side of the sternum is blunter, while the extent of black on the sternal plates is rather greater.

It is very clear that these variations tend in a great measure to obliterate the distinction between *P. tectum* and *P. tentoria*; the only remaining difference being the more tumid form of the first named species. But I doubt if this be a more valid character than the form of the plates. In two Calcutta specimens in the Indian Museum, I find the measurements to be in inches.

	1.	2.
Length, .....	3.3	3.7
Breadth, .....	2.7	2.5
Height, .....	1.3	1.8

Indeed, judging from Günther's figures and description, I should rather have suspected my specimens from the Hasdo to be a variety of *P. tentoria* than of *P. tectum*. It is never quite safe to conclude that a species is not distinct without comparison of specimens, but I cannot help thinking it highly probable that *P. tentoria* must be considered a variety of *P. tectum*. *P. flaviventer* has better grounds to distinction, and *P. Smithii* is clearly a well marked species.

I may here remark that if the assignment by Gray\* and Günther† of figs. 3, 4 and 5 on the plate of *Emys tectum* in Hardwicke's Illustrations of Indian Zoology to *P. tentoria* be correct, the species must fall at once, for those figures are most unmistakeably taken from old specimens of *P. tectum*, and the differences of coloration pointed out by Gray are of no importance. They may be in part seasonal, at any rate the brightly coloured small specimens with an orange stripe down the centre of the ante-

\* Cat. Shield Reptiles, p. 37.

† Reptiles of British India, p. 34.

rior vertebrals, are of the same species as those in which the stripe is wanting. But the species *P. tentoria* was originally founded by Gray on a specimen brought by Col. Sykes from Western India, and there may possibly be a difference, though I cannot tell what it is.

## 2. EMYDA VITTATA? Peters.

A single specimen of *Emyda*, obtained in a tributary of the Mánánaddi, differs from *E. granosa* in several minor characters. The outline of the vertebral plates is far more indistinct, even after the specimen has been in spirits for some months, and their surface has no trace of the fine granulation seen in *E. granosa*. The carapace appears also to be lower, and much longer in proportion to the breadth, and the coloration is different, there being a total absence of yellow spots on the back and head. The following description of the colours was taken from the animal when alive.

Back of the shell dark olive with a few indistinct dusky marks, only conspicuous when the surface was wet: beneath pale salmon colour. Head and neck olive above, with a slight rufous tinge, a dark line running backwards and a little downwards from the hinder corner of the eye, a second above and a third below, also commencing from the orbit, all somewhat waved, some black irregular spots on the back of the neck between the innermost lines. Lips bright pink, lower part of head bright salmon colour. The length of the carapace is 4·7 in., breadth 3·9", height 1·5". In spirit the dimensions have decreased.

Unfortunately the volume of the Monatsberichte Berlin Akad., containing Peters's description of *Emyda vittata*, does not exist in either of the Calcutta libraries, the Society's and that of the Geological Survey. Günther's description in Rept. Brit. Ind. is scarcely sufficient for identification. He merely says "This species has been characterized by the black streaks and spots on the head and neck, and is said to have been brought from Goa."

The specimen of *Emyda* obtained was found under the sand in a melon plantation in the dry part of a river bed. I found the tracks upon the sand, and followed them till they disappeared, and at that spot the tortoise was concealed two or three inches below

the surface. Running water of some depth was within few feet, but the animal had not entered it, and had, during the night, come for at least a quarter of a mile along the sand from another hiding place beneath some grass, without once entering the water. The people of the country are quite aware of this habit, and when I pointed out the tracks to a fisherman, he said at once that the tortoise would be found in the sand by following them. It is evident, therefore, that Günther's statement, that *Emyda* is thoroughly aquatic, requires modification. I have often seen tracks on the sand of streams before, but always supposed them to be made by *Emys* or its allies. The time of year was the middle of March at the commencement of the hot season.

*Loc.* Seo river, a tributary of the Mábánaddi in Raipúr.

### 3. TRIONYX GANGETICUS, Cuv. var.

I obtained three specimens in Biláspúr, all of small or moderate size: they differ from Calcutta specimens in coloration, but not to any important extent in form: the carapace is perhaps a little broader, in proportion to the length, but the difference is very trifling; both have the swelling on the anterior dorsal portion of the carapace, and precisely similar ornamentation. In the younger specimens, the anterior dorsal bone is separated by an unossified space from the first costals, but in an older specimen they are perfectly united.

The largest specimen exceeded a foot in length when alive, the carapace now measures 8·5 inches in length by 8 in breadth. The second measured 7 inches by 6 when living, the carapace in the dried specimen being 4 inches by 3·25. The small specimen preserved in spirits measures 3·9 by 3·5.

All were rather pale olive in colour above, on the shell as well as on the head and limbs. In the smallest specimen there were 2 pairs of very indistinct ocelli on the carapace. The back of the head and neck shewed black veinings. Neither head nor limbs were spotted nor presented any pale markings, the lower parts were flesh coloured, lips yellow. There were in the smallest specimen about 15 very irregular rows of granules on each side of the shell, and some scattered isolated granular tubercles on the hinder por-

tion. On the intermediate specimen, the granules were fewer in number and on the largest they were obsolete.

*Loc.* With *Pangshura tectum* var. *intermedia* in the Hasdo river, a tributary of the Máhánaddi.

## SAURIA.

## 4. CABRITA LESCHENAULTII (M. Ed.)

Dum. et. Bib. Erp. Gen. V, p. 262, nec Gray, nec Günther.

There has evidently been some confusion about this species. I have not access to the original description by Milne Edwards, but the excellent detailed account of the characters in Dumeril and Bibron is taken from authenticated specimens of Milne Edwards' species and I believe from the type. Dr. Günther had no specimen to examine, and appears to have accepted Gray's opinion of the identity of his *Cabrila brunnea* with Dumeril and Bibron's *Calosaura Leschenaultii*.

All writers appear to have overlooked the fact, that *Cabrila brunnea* is a different lizard from *Lacerta Leschenaultii*, as will be seen by the following comparison of the characters taken from Gray's description in one case, and Dumeril and Bibron's in the other.

<i>Cabrila brunnea</i> , Gray, Ann. and Mag. Nat. Hist. 1838, Ser. 1, Vol. I, p. 282.	<i>Calosaura Leschenaultii</i> , Dum. and Bib., 1839, loc. cit.
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Nostrils in a horizontal suture between two small nasal shields having a smaller one behind them. (In Cat. Liz. Brit. Mus. p. 43. Nostrils on the muzzle ridge between a superior and inferior nasal plate with a small hinder nasal. Günther gives the same description with only trifling verbal alterations.)

La narine . . est située positivement à l'extrémité du *canthus rostralis* entre deux plaques qui s'articulent avec la rostrale. Les deux plaques naso-rostrales...ont derrière elles une paire de petites plaques qui sont les analogues des naso-frénales des Lézards.

*Cabrila brunnea* was described by Gray from a specimen of unknown locality in the collection of Mr. Thomas Bell. *Lacerta Leschenaultii* was founded on lizards sent from the Coast of Coromandel by M. Leschenault.

There are, I may add, one or two minor discrepancies in the descriptions of the French and English authors which, although unimportant by themselves, tend to support the view here taken of their having had different species before them. D u m. et B i b. describe the 6 rows of ventral plates thus; "aux deux series medianes et aux deux marginales elles présentent moins de largeur qu'aux deux autres." In the original description of *Cabrita brunnea*, G r a y says "Ventral shields 6-rowed, central ones narrowed on each side" and in Cat. Liz. Brit. Mus. "Ventral shields 6-rowed, the middle row on each side largest." Both D u m e r i l and B i b r o n had examined Mr. B e l l ' s collection, but I can find no reference in their work to *Cabrita brunnea*.

In these points of difference, the specimens procured by me in Central India, coincide with the description of *Calosaura Leschenaultii*, and differ from G r a y ' s species. The only differences which I can observe between my specimens and the description by D u m e r i l and B i b r o n are, that in the latter one large præanal shield is stated to be surrounded by small scales, whereas in Central Indian specimens, there are two enlarged præanal plates one before the other, the posterior being the largest, and whereas in the type in Paris the temporal regions are said to have three small quadrilateral plates against the upper border, in my specimens there is one long plate above the small scales covering the temples. The latter character is certainly of no consequence, and the amount to which the anterior præanal plate is enlarged varies in different individuals. I unhesitatingly refer the lizards collected by myself to *Calosaura Leschenaultii*.

The question then arises, what is the locality of *Cabrita brunnea*, and is it congeneric with *Calosaura Leschenaultii*? G r a y in the Catalogue of Lizards in the British Museum, 1845, p. 43, certainly gives India as the locality for the specimens in B e l l ' s collection, but unfortunately British Museum Catalogues are fallible on the score of localities, and in 1838 it was not known whence Mr. B e l l ' s specimens were obtained.

Mr. B l y t h in his notes to Dr. J e r d o n ' s Catalogue, J. A. S. B. xxii, p. 476, stated that the Museum of the Asiatic Society had at that time, 1853, examples of what he took to be *Calosaura*

*Leschenaultii* from Pind Dadun Khan in the Punjáb Salt Range, and formerly possessed the same from Afghanistan. None of these specimens could be found, when Mr. Theobald made a Catalogue of the Society's Reptiles in 1865 (J. A. S. B., 1869, Pt. II). They may very possibly have been in bad condition from inadequate preservation in the first instance, and have fallen to pieces. If so, it may have been difficult to identify them, and as Dr. Jerdon has recently described a very similar lizard, *Pseudophiops Theobaldi*,\* from the Punjáb, and as the distinction between *Ophiops* or *Pseudophiops* and *Cabrita* would be very difficult to determine in specimens in bad condition, it is not impossible that the Pind Dadun Khan specimens may have been a *Pseudophiops* or some other lizard.

In his Catalogue of the Reptiles inhabiting the Peninsula of India, l. c., Dr. Jerdon describes *Calosaura Leschenaultii* from specimens obtained in the Salem and Coimbatore districts, but he does not mention the form of the nasal plates. Major Beddome has, however, since procured the same lizard in the same localities, and, on my writing to inquire, he has kindly examined his specimens, and he informs me that the nostril is between two swollen plates followed by a small post-nasal. I think there can be but little doubt, therefore, that this is Gray's *Cabrita brunnea*.

It will be seen from my remarks on the next species, that the characters of the nasal plates are eminently variable amongst these lizards, which appear to be otherwise closely allied, and I therefore see no reason for considering *Calosaura* and *Cabrita* distinct genera. The generic character will, however, require modification, but to this I will recur after my notes on *C. Jerdoni*.

The few individuals of *Cabrita Leschenaultii* which I obtained were found in thin forest. It is a quick active lizard, but less so than *Acanthodactylus*, and its habitat accounts both for its being less agile, since it can more easily elude its enemies by hiding, and for its very different coloration. The length is 6 inches, of which the tail is nearly 4.

The following description of the coloration is taken from a fresh specimen. Head above dusky, centre of the back brown, bordered

\* Proc. As. Soc. Beng. March, 1870, p. 71.



with black against a white line which runs from behind the eyebrows to the tail, below this on the sides is a band of brown, finely mottled with black, then another white line less distinct than the first, running from the upper labials through the tympanum and just above the shoulder to the thigh. Below this from the thigh to the shoulder is an apple green band broken by black mottling, especially above in front. Some black spots and occasionally mottling occur on both upper and lower labials. Lower parts pure white. Limbs above brown finely mottled with black.

A female killed in April contains 6 eggs, each about  $\frac{3}{16}$  inch long. The femoral pores vary in number from 13 to 15, and the transverse rows of ventral shields from 24 to 27 in the specimens before me. On such slender evidence, nothing certain can be stated as to the connection between the number of the latter and sex, but in 2 females the ventral shields are in 27 transverse rows, whilst a male has 24.

*Loc.* S. E. Berár and Chánda, not common. A single specimen was also obtained in Udipúr between Chhatisgarh and Chota-Nág-púr.

5. CABRITA JERDONI, B e d d o m e.

Madras Monthly Journal of Medical Science, January, 1870, p. 34.

Major B e d d o m e obtained only a single specimen of this interesting form. I have been more fortunate, having found a small lizard abundant in several localities, which I have no doubt is that described, but which has the nasal shields different from those in *C. Leschenaultii*. In my specimens the nostril is between three shields, one præ- and two post-nasals, the prænasal large, articulating with the rostral, the opposite nasal and the præfrontal, one shield behind and below the nostril which joins the first labial and the anterior loreal, and one behind on the *canthus rostralis* which touches the anterior loreal and the præfrontal. In every other detail, my specimens agree with Major B e d d o m e 's description.\*

\* Since writing the above, I have heard from Major Beddome, to whom I sent a specimen, that it agrees exactly with his type. Major Beddome also informs me that he proposes to make this species the type of a new genus *Cabritopsis* on account of the differences in the nasal plates. I prefer keeping *C. Jerdoni* in *Cabrita*, as the distinctions scarcely appear sufficient to require

The characters of the nasal plates are the same or very nearly the same as in the genus *Eremias*. But in that form there is a distinct collar of large scales beneath the throat, and this only represented by a small fold before each shoulder in *Cabrita*.

In some individuals of *C. Jerdoni*, the sutures between the post-occipital plates appear to be obsolete as in Major Beddome's specimen. In others, however, perhaps of less mature age, the sutures can be distinctly traced between the two pairs of raised lines. In some specimens the suture between the occipital plates is obsolete. The central post-occipital is much broader than in *Calosaura Leschenaultii*, being very little narrower than the lateral plates beside it. Femoral pores 11 to 14, ventral shields in about 20 to 24 transverse rows. Specimens from the eastward, from Chhatisgarh and the states west of Chota-Nágpúr, are darker and less rufous, with more black spots along the sides of the back, on the flanks, and on the chin than those from the neighbourhood of Chánda, and the former are rather larger in size. The average length differs not more than half an inch, being about  $4\frac{1}{2}$  to 5 inches, of which the tail is  $3\frac{1}{2}$ , measured from the anus.

*Loc.* Abundant on a range of rocky hills in S. E. Berár, just west of the Warda river near Chánda. Found more sparingly in parts of Chánda, Bhandára and Raipúr; common in the sál forests of eastern Biláspúr, Udipúr and Jáshpúr and probably in Chota-Nágpúr.

The following is the character of the genus *Cabrita* as amended to comprise the additional species, and the synonymy of the forms included.

#### CABRITA, Gray.

Ann. and Mag. Nat. Hist. 1838, Ser. I, Vol. I, p. 282.

Syn. *Calosaura* Dum. et Bib., Erp. Gen. V, p. 261.

Nasal shields swollen, variable in number and distribution. No collar, a fold before each shoulder. Eyelids present, lower eyelid with a large transparent disk. Dorsal scales similar to lateral, all sharply keeled and arranged in oblique rows. Ventral scales 4-sided, smooth, longitudinally arranged. Femoral pores. Toes 5-5, keeled beneath. Coloration brown, not grey.

generic separation, and the three species *C. Leschenaultii*, *C. brunnea* and *C. Jerdoni* together form a well marked and natural genus.

1. *Cabrita brunnea*, Gray, A. and M. N. H., I, p. 282.

*C. Leschenaultii*, Gray, Cat. Rept. Brit. Mus. 1845, p. 43.—Günther, Rept. Brit. Ind. p. 71.

*Calosaura Leschenaultii*, Jerdon, J. A. S. B. XXII, p. 476,—Proc. As. Soc. 1870, p. 72.

*Loc.* Cavery valley in the Coimbatore and Salem districts, (Jerdon, Beddome).

2. *C. Leschenaultii*, (M. Ed.)

*Lacerta Leschenaultii*, M. Ed., Ann. Sci. Nat. XVI, pp. 80, 86, pl. VI. fig. 9.

*Calosaura Leschenaultii*, Dum. et Bib., Erp. Gen. V, p. 261.

*Loc.* Coromandel, (Leschenault), S. E. Berár, Chánda and country between Biláspúr and Chota-Nágpúr, (W. T. B.).

3. *C. Jerdoni*, Bedd.

Mad. Monthly Jour. Med. Sci., January, 1870, p. 34.

*Loc.* Cavery valley (Beddome.) S. E. Berár, Chánda and throughout the southern Central Provinces; Chota-Nágpúr, (W. T. B.).

The next lizard is a very interesting novelty, being an additional form of the naked-eyed lizards (*Ophiops*) of which one species was described by Mr. Blyth in the Journal of the Society for 1853, Vol. xxii, p. 653, and two others have been recently named by Dr. Jerdon (Proc. As. Soc. Beng., March, 1870, p. 71).\* These Indian forms have been separated by Dr. Jerdon from true *Ophiops* as a new genus *Pseudophiops*, on account of differences in the characters of the nasal and post-nasal shields. In *Ophiops* proper, the nasal is between an upper and a lower nasal shield, with 2 post-nasals (Dum. et Bib.) or 3, according to Gray and Günther. In *Pseudophiops*, the nostril is in the hinder part of a nasal shield, which is followed by two post-nasals. In the new form, the nostril is on the ridge of the snout between an upper and lower plate as in *Ophiops*, but with one small post-nasal which lies between the posterior margins of the two nasal shields,

\* Dr. Jerdon l. c. mentions having obtained near Saugor another species of this group. Can it be that now described?

and is only just separated from the nostril. In other specimens or in allied species, the nostril may very possibly be found to be at the point of junction of the three plates.

After the details already given in the case of *Cabrita*, I doubt much if these characters of the nasal shields are of generic importance. They appear to me to be at the most sectional or sub-generic characters. They are easily recognised, however, and are therefore convenient for classification. I am myself inclined to consider *Pseudophiops* as a sub-genus of *Ophiops*, and the present form as an additional sub-genus. If, however, *Pseudophiops* have generic rank, the present may also be considered a distinct genus.

Gymnops subg. nov. *Ophiopsis*.

*Naris inter dua scuta inflata, uno superiori, altero inferiori, posita, scuto tertio posteriori ad narem fere attingente. Palpebræ nullæ.*

6. *Ophiops* [*Gymnops*] *Microlepis*, sp. nov. Pl. xv, Figs. 1-5.

*O. scutis cerebralibus subplanis, haud rugatis, præfrontali unico, post-frontalibus suturâ solâ disjunctis, scuto nullo interveniente, occipitalibus parvis, quartam partem postoccipitalium subæquantibus, submentalibus utrinque 6 vel 7; squamis dorsalibus minutis, carinatis; præanali uno magno, altero vix minori ante eum; caudâ elongatâ, antice subquadratâ, postice rotundatâ, attenuatâ, corporem longitudine magis quam duplo excedente; dorso medio griseo, ventre albido, lateribus maculatis, lineâ albidâ utrinque ab superciliis ad lumbum decurrente, maculis fuscis supra et infra marginata, aliâ inferiori infra oculum oriente, vix post humerum distinguenda, fasciatis.*

Head of moderate length, muzzle depressed, rounded. Rostral shield large, running back below the nostril so that the lower nasal shield rests partly on the rostral, partly on the first labial. All the three nasal shields swollen, the two upper nasals meeting with a short suture behind the rostral. Post nasal small, on the *canthus rostralis*, semi elliptic, the rounded margin directed forwards and only just separated from the nostril; this shield is separated from the upper labials by the lower nasal, and abuts behind partly against the præfrontal, partly against the anterior loreal. Præfrontal hexagonal, single, concave in the centre. Postfrontals each about equal in size to the præfrontal meeting in a rather long su-

ture, without any intermediate shield. Vertical elongate with a longitudinal groove in the middle for the anterior half of its length, sides concave, posterior margin forming a salient angle. The two large supra-orbitals have a row of granules on their exterior margins, a small shield in front and one or two behind them. Occipitals small, each little more than a quarter the size of a postoccipital. Postoccipitals irregularly pentagonal with small shields between them, hinder edges straight, rather oblique.

Loreals two, the upper parts of both bent over to form the *canthus rostralis*, the anterior about half the size of the posterior, the latter in the specimen broken up below on each side into small shields. Temples covered with small inflated subcarinate scales with 3 or 4 small shields along the upper margin. Ear opening much higher than broad, one enlarged scale in front of the upper portion. Upper labials about 8, the 5th from the front much enlarged and below the orbit, lower labials 7 or 8. Mental shield large, chin shields in 6\* (? 7) pairs the first two (3) pairs meeting.

The fore leg laid back extends to the thigh, laid forward it reaches to the end of the snout, the hind toe comes just beyond the ear. The first three toes on the fore foot are graduated, the 4th is very little longer than the 3rd, the 5th about equal in length to the 2nd. All the toes are keeled and denticulate beneath, but not at the sides. In the hind foot, the first four toes increase regularly in length, the 5th is about as long as the 3rd.

There is a well marked fold in front of each shoulder, not vertical, but inclined obliquely upwards and backwards, with very small scales behind it and in front of the shoulder. There is no collar beneath the throat. Scales of the belly rhomboidal, in six rows, the four centre rows about equal in size, the lateral ones rather smaller. Dorsal scales strongly keeled, very small, much smaller than in *Cabrita Leschenaultii*, and not oblique as in that species, arranged in transverse rows; there being about 50 in each row. Scales of the tail much larger than those of the back, all strongly keeled. Two large plates in front of the anus, one before the other, the hinder being the largest. Femoral pores 14 on each side.

\* In the only specimen obtained there are six chin shields on one side, seven on the other.

Tail rather more than twice the length of the head and body, measured from the nose to the anus.

The dimensions of the specimen obtained are :

	in.
Whole length, .....	7.2
Length of head from end of nose to hinder margin of postoccipitals, .....	0.55
,, from end of nose to ear, .....	0.55
Breadth of head at superciliary ridge, .....	0.25
Length of head and body from nose to anus, ....	2.1
do. of tail from anus, .....	5.1
do. of fore leg and foot to point of finger, ....	0.9
do. of longest finger, .....	0.3
do. of hind leg and foot, .....	1.5
do. of longest toe, .....	0.55

In colour, the head above and the middle of the back are grey, marked towards the sides with dusky brown, especially on the margin of two narrow white lines, one running backwards from the hinder part of each superciliary ridge to the insertion of the tail, where it becomes lost in a broader pale reddish band. These bands a little way down the tail unite above and all the upper part of the tail becomes reddish. The sides of the head, body and tail are spotted with dusky, the spots on the head and body being fewer below, and another white line less well marked than the upper one runs from below the eye just above the shoulder, becoming much less distinct behind; below this, in life, there are on the sides a few green spots mixed with dusky specks which fade in spirit. Lower parts white.

*Loc.* But a solitary specimen of this curious Lizard was found at Korba in Biláspúr, the eastern part of the Chhatisgarh division, Central Provinces.

*Ophiops microlepis* may be distinguished from *O. Jerdoni* by the differences in the nasal plates, by the head shields being flat and not ribbed, by the post-frontals having no intermediate shield, by the smaller occipitals, and by the narrow shields between the post-occipitals, whereas in *O. Jerdoni*, the intermediate plate is half the breadth of a post-occipital.

Other differences are the much smaller scales, the more numerous chin shields, the proportionally longer limbs and much longer tail, and the more numerous femoral pores. In *O. Jerdoni*, the length from the nose to the anus is 1.65 inch, of the tail from the anus 2.4. In *O. microlepis*, as before, the head and body measure 2.1, tail 5.1 inches.

Of the two new species of *Pseudophiops*, described by Dr. Jerdon, only a few characters have been given, but these shew other differences from *O. microlepis*, besides those of the nasal plates, which are similar, it may be presumed, to those of *O. Jerdoni*. In *Pseudophiops Theobaldi* there is a shield intercalated between the posterior frontals, and the proportions of body to tail are 5 to 7. *P. Beddomei* has two anterior frontals, and the head still shorter and more triangular than in *Jerdoni*. The reverse of the latter is the case in the present species.

#### 7. *Euprepes innotatus*, sp. nov. Pl. xvi, Fig. 9.

*E. parvus, figurá coloreque E. macularii similis, dorso olivaceo, lateribus purpurascenti-brunneis, ventre flavo, (vel albo?), linea albescenti utrinque superciliari postice et antice productá, alia inferiori breviori ab aure ad humerum decurrente; palpebrá inferiori mediá translucente, lineis impressis haud notatá; squamis in 32 seriabus longitudinalibus, dorsalibus quinque carinatis.*

I am indebted to Dr. Anderson for calling my attention to this species, which I had overlooked amongst several specimens of *E. macularius*, Blyth. I have unfortunately but a single example, it differs, however, so much from the two Indian *Euprepes*, with transparent lower eyelids, previously described, viz., *E. trilineatus*, Gray and *E. Beddomei*, Jerdon, that I see no resource but to consider it new.

*Desc.* A pair of small supranasal shields; the single præfrontal touches the rostral, but is just separated from the vertical by the post-frontals.\* Opening of the ear not very small, with two or three minute denticles in front. Lower eyelid with a transparent disk. Scales in 32 longitudinal series and in 32 transverse rows between the axils: dorsal scales with 5 (here and there with 4 or even \*3)

\* This is not a character of much importance, and I find it varies much, in other species, in different individuals.

well marked equidistant keels. Præanal scales not enlarged, sub-caudals broader behind but not near the anus.

Colour olivaceous above, sides purplish brown, under parts yellow when alive with a red band from the thigh to the shoulder; these colours disappear in spirits, and are doubtless only seasonal. A few black spots on the back and upper parts of the tail. A whitish line on each side from the nostril along the superciliary ridge and extending about half way down the back, another, very ill marked, from the tympanum to the shoulder, a few fine white spots are scattered over the sides of the neck.

In the only specimen procured the tail is imperfect. The body measures 2.25 inches from the nose to the anus, fore limb to end of toes 0.7, hind limb 0.9, 4th toe of hind foot 0.3, 3rd of do. 0.22 inch.

This species is distinguished from *E. trilineatus* by having five (sometimes four) instead of six or seven keels on the dorsal scales, and by the very different coloration without any trace of the central dorsal line. The same characters apparently separate it from *E. Beddomei*, J e r d o n, Proc. A. S. B., 1870, p. 73, the scales of which, however, are not described, but the coloration is even more diverse than that of *E. trilineatus*. From all other Indian forms the present is well distinguished by its transparent lower eyelid.

*Loc.* Pem Ganga valley, S. E. Berár.

It is well worthy of note that the species of *Euprepes* with a transparent lower eyelid appear restricted in South-Eastern Asia to what I have called the Indian province proper. None are known from Malabar, Eastern Bengal or the Indo-Chinese countries (except one species of a very peculiar type from Borneo), nor even from the Bengal sub-division of the Indian province. One species, *E. Petersii*, S t e i n d., has been found in Thibet. This is precisely what might have been expected, the form being principally African.

#### 8. EUPREPES [TILIQUA] CARINATUS, (S c h n e i d e r).

*Euprepes rufescens*, (S h a w). G ü n t h e r Rept. Brit. India, p. 79. *E. Sebæ*, D u m. et B i b r. Erpét. Gén. V. p. 692. *Tiliqua rufescens*, G r a y, Cat. Liz. Brit Mus. p. 109. *Euprepes carinatus*, (S c h n e i d.), Peters, Monatsberichte Berl. Akad. 1864, p. 50.



All my specimens from Chánda, Raipur and Chota-Nágpúr differ so much from G ü n t h e r ' s description, that until I had an opportunity of comparing them, I supposed them to be either a variety of *Tiliqua trivittata*, G r a y, or else a new species. The most marked peculiarity of all the specimens I have collected is the existence of five keels on the dorsal and lateral scales instead of three, the usual number in *E. carinatus*. Occasionally the two outer keels are more or less obsolete on part of the back and sides, but in most specimens there are five well marked keels throughout. Specimens from Bengal and the countries to the eastward have only three keels in general, but careful examination usually shows the presence of the two others more or less imperfectly developed on a few scales, usually on those of the loins.

D u m e r i l and B i b r o n notice this, but they are in error in supposing, p. 694, that the young has "sometimes seven but more frequently five keels," and they have evidently confounded *E. macularius*, B l y t h or else *E. multicarinatus*, K u h l, with the young of *E. carinatus*, as did also C a n t o r, (*vide* T h e o b. Cat. Rept. p. 24, J. A. S. B., Part II, 1868). I obtained several young specimens which I take to belong to the latter, of various sizes up to about 5 inches in length. All have three keels only.\*

I cannot attach much importance to the form of the anterior head shields. In some specimens the præfrontal touches the vertical, in others it is widely separated.

In coloration, specimens of *Euprepes carinatus* from localities as distant from each other as S. E. Berár and Chota Nágpúr agree perfectly, but they differ somewhat from all described varieties, though approaching G ü n t h e r ' s var. a and D u m. et B i b r o n ' s var. A. The following description is taken from a fresh specimen.

Back olive, the posterior edges of the scales darker in some specimens; superciliary stripe white, continued as a well marked white band down the sides of the back to the insertion of the tail and continued as a pale but not white band on the tail for about one-third of its length; beneath the narrow white band is a broad chesnut one

\* If not the young of *E. carinatus*, these belong to an undescribed species, but all my specimens appear to be immature.

including the eye and the upper part of the ear, and extending backwards as far as the thigh: lower part of the sides of the head including the upper labials white, as are sometimes all the lower parts, but they are more frequently golden yellow, in some cases with a blotchy scarlet band, extending from the shoulder to the thigh, below the chesnut portion of the sides, a pale whitish line intervening between the two colours. These red patches I believe to be seasonal, and so is perhaps, to some extent, the golden yellow of the under surface, which varies also in extent. These red and yellow colours fade in spirit.

In the specimens which I suppose to be young, the back has a coppery tinge only seen in fresh specimens. Nearly all, both young and adult, have 32 rows of scales round the body, a few specimens having 30 or 31. The largest specimen obtained by me measures 10.5 inches, of which the tail is 6.5. This is decidedly smaller than specimens from Lower Bengal and the Burmese countries.

Whether the form inhabiting the Indian Peninsula deserves separation from the Bengal and Burmese species I am not certain, but I think the difference in the development of the keels on the scales, and in the coloration, eastern specimens being almost uniform, shew the two to be well marked races.

*Loc.* *Euprepes carinatus* I found, although not very common, throughout the country traversed, *viz.*, in S. E. Berar, Chánda, Bhandára, Raipúr and Biláspúr in the Central Provinces and in the country west of Chota-Nágpúr. I did not observe it in the sál forests of the latter region, it is usually seen in thin tree jungle with underwood, or amongst bushes.

*E. trivittata*, Dr. J e r d o n informs me, occurs at Nágpúr. I did not meet with it to the southward or eastward. The specimen in the Museum at Calcutta differs not only, as pointed out by T h e o b a l d, in having five keels on the scales throughout, but also in those keels being stouter, more regular and more equally developed than in *carinatus*, in the very different coloration, three broad white bands with distinct edges down the back, and in the number of scales, there being 36 longitudinal rows round the body.

9. *E.* [TILIIQUA] MACULARIUS, Blyth, var.

*E. macularius* Blyth, J. A. S. B., 1853, Vol. XXII, p. 652. *Tiliqua multicarinata*, Jerdon, J. A. S. B., 1853, Vol. XXII, p. 479, note.—Theobald, Cat. Rept. Mus. As. Soc. Bengal, p. 24, in J. A. S. B. for 1868, appendix, *partim*.

I obtained a considerable number of specimens of a scink which I have very little hesitation in referring to the above species. It agrees admirably in every character except the number of keels on the scales, which appears to me somewhat variable in both instances. The coloration is identical. I shall proceed first to give a detailed description, and then to point out why I do not think this species can be identified with *Scincus multicarinatus* of Kuhl, as has been proposed by Mr. Theobald.

*Desc.* General form less stout than in *E. carinatus*. Lower eyelid scaly. A pair of supranasal shields; the single præfrontal meets both the rostral and the vertical, and often forms a rather broad suture, with the first especially; post-occipitals generally rather short longitudinally, and often ribbed posteriorly; behind them, as in *E. carinatus*, are two plates of small longitudinal extent, but nearly equal in breadth to the post-occipitals, and with many keels, usually about nine, upon them. Opening of the ear rather small, slightly granulate in front and below. The fifth upper labial usually longer than the others, but this character is far from constant, and appears rarely so well marked as in *E. carinatus*. Scales in 28 longitudinal rows, rarely in 27, 29 or 30, and in 20 to 24, generally 22, transverse rows between the axils, those of the back with from five to seven keels each, the prevailing number being five. No enlarged præanal or subcaudal scales, except (in the latter only) when the tail has been renewed.

The coloration is nearly as described by Blyth. Upper parts bronze, the hinder part of the back and the anterior portion of the tail usually but not always with a few irregular black spots varying much, both in number and character, in different individuals, and occasionally forming interrupted lines on the tail. Sides darker than the back, especially above, and more or less spotted with white, the sides of the tail near the base with alternating longitudinal broken lines of dusky and whitish; hinder parts whitish, or

sometimes, in fresh specimens, yellow, with a red band along the lower part of the side. These red and yellow colours were only observed in spring. Length 4.5 to 5.5 inches. A large specimen measures 5.7 : in this the tail from the anus is 3.6, forelimb and toes 0.55, hind limb and toes 0.8, longest toe (4th) of hind foot 0.3, next longest (3rd) 0.23 inch.

Mr. Blyth's original specimen was supposed to be from Rangpúr. It is doubtless the same to which Dr. Jerdon had alluded in the same volume of the Society's Journal (Vol. XXII, p. 479, note). Of the four specimens mentioned under this name by Mr. Theobald in his Catalogue of the Reptiles in the Society's Museum, p. 24, three probably belong to a different species, the coloration not agreeing with Mr. Blyth's description. The 4th specimen which is in very poor condition is evidently Mr. Blyth's type.\* It is rather stouter than my specimens from Central India, and the tail and limbs are a little shorter in proportion, whilst the dorsal scales are very generally seven-keeled throughout, a few scales only having but five or six keels. In the characters of the head scales, and in the coloration, I see no distinction, and the number of scales round the body is the same, *viz.* 28. The Indian Museum has recently received other specimens from Assam and Cachar, which closely resemble Mr. Blyth's type specimen. It is thus evident that there is a slight distinction between the Assam species and that inhabiting Eastern Central India, the difference being similar to that found in *E. carinatus*. It may be briefly expressed by saying that Assamese specimens have seven keels on the dorsal scales as a rule, five as an exception, whilst in specimens from Chhatisgarh and Udípur five keels are the rule, seven the exception, and that the latter form is rather more slender with longer tail and limbs. I have unfortunately no specimens from Pegu for comparison ; so I cannot tell if Mr. Theobald's *Tiliqua multicarinata*, Jour. Linn. Soc. 1868, Vol. X, p. 26, be the same or not. Mr. Theobald has examined my specimens and is disposed to consider them distinct.

\* I am indebted to Dr. John Anderson for pointing this out to me ; the specimen was in such poor condition, that I did not myself remove it from the bottle, and having satisfied myself that the other three specimens could not have been the types, I rather hastily concluded that the original of Mr. Blyth's description had been lost.

Unfortunately Kuhl's *Beitrag*e is not procurable in Calcutta, and I have not access, therefore, to the original description of *Scincus multicarinatus*. The characters of the British Museum specimens from the Philippines, as given by Gray in the Catalogue of the specimens of Lizards, 1845, p. 109, shew totally different coloration from *E. macularius*, an important character where the ornamentation is so constant as it appears to be in the Indian species; the head shields are said to be rather rugose, the scales large, ovate, and transverse. These are not the characters of *E. macularius*, which has smooth head plates, and hexagonal scales about equally broad and long.

From *E. carinatus* this species may be distinguished by the more numerous keels and the coloration, by its much smaller size and narrower form.

*Loc.* Not rare in the Eastern part of Chánda and in Bhandára. Extremely abundant (far more so than *E. carinatus*) throughout the sál forests in Biláspúr, Udípúr and Jashpúr west of Chota-Nágpúr.

10. *E. (Tiliqua) septemlineatus*, *sp. nov.* Pl. xvi, Figs. 7-8.

*E. parvus*, *similis* *E. carinato* sed *multo minor*, *supra et ad latera nigrescente brunneus*, *albido longitudinaliter 7-lineatus*, *ventre albido*, *squamis tricarinatis in 30 seriebus longitudinalibus*, *palpebra inferiori striis impressis signata*.

*Desc.* Form moderately slender. A pair of supranasals. The single præfrontal is just separated from the rostral, and more broadly from the vertical; fifth upper labial elongate. Lower eyelid with faint lines on it throughout and with no transparent disk. Ear opening small, with two or three well marked denticles in front. Scales three keeled, in 30 longitudinal rows, and about 28 transverse between the axils, præanal and subcaudal scales not enlarged. Colour brownish black above with seven equidistant narrow white longitudinal stripes, three on the back and two on each side, the upper of the latter arising from the supercilia, the lower from the upper labials. These bands are only lost on the tail down which some of them extend. Plates on the top of the head dark in the centre with pale margins, limbs dark above, the hind legs with white spots: lower parts white.

Length nearly 4 inches,\* tail from anus 2.1 ; fore limb to end of toe 0.43 ; hind limb to do. 0.65 ; third toe of hind foot  $\frac{3}{4}$  the length of the fourth.

*Loc.* A single specimen only found on a stony ploughed field amongst thin jungle in the Pem Ganga valley, S. E. Berár.

11. *RIOPA HARDWICKII*, G r a y.

Scarce in the southern part of the central provinces. I have not met with a *Riopa* in S. E. Berár or Chánda.

My largest specimen measures 4.2 inches, of which the tail from the anus is exactly 2. Scales in 26 longitudinal rows in two large female specimens, and in 25 in two smaller ones (males?). One of the former contains four eggs.

*Loc.* Korba in Biláspúr.

12. *RIOPA ALBOPUNCTATA*, G r a y.

Only found in the same neighbourhood as the last, and scarce. The country where alone I obtained specimens was just where the range of the sál tree was entered from the westward.

In five specimens procured, three have 28 and two have 26 scales round the body ; transverse series between the axils of the fore and hind limbs 45 to 48. My largest specimen measures 4.4 in., of which the tail is 2.5.

*Loc.* Korba in Biláspúr ; Udipúr.

13. *HEMIDACTYLUS MACULATUS?* D u m. and B i b.

The larger tubercles often vary greatly in the extent to which they are angulate in the same individual ; in parts of the body they are often sharply trihedral, in other places, especially on the hinder part of the head, the sides of the body and the upper parts of the limbs, hemispherical. In different specimens, I find the upper labials vary from eight to eleven, the former being the common number about Chánda. The lower labials are if anything even more variable. The rows of scales across the abdomen are in some specimens only 34 or 35, usually there are about 40.

\* The specimen is imperfect, the tail having been broken when captured and since lost, but the measurement was taken at the time of capture.

I cannot help doubting whether the type of Dumeril and Bibron's species, 241 mm. (above  $9\frac{1}{2}$  inches) long, is really identical with the Indian Gecko. Jerdon has noted this distinction also in his Catalogue; J. A. S. B., XXII; p. 467. Out of a considerable number of specimens, I have none exceeding  $4\frac{1}{2}$  inches in length. But the synonymy and classification of the *Hemidactyli* of India and the neighbouring countries is still far from clear.

*Loc.* Found everywhere under stones and on trees. Very common about Chánda; I obtained specimens also in Raipur and to the eastward. It is common in Calcutta houses, the tubercles being a trifle smaller and blunter than in Central Indian examples.

14. *Hemidactylus gracilis*, *sp. nov.* Pl. xvi, Figs. 4-6.

*H. affinis* *H. reticulato*, Bedd., *gracilis*, corpore parum depresso; cauda rotundata, elongata, sine spinis vel tuberculis majoribus; dorso granulato, tuberculis majoribus subtrihedris elongatis ornato; poris femoralibus nullis, inguinalibus 6; griseus, maculis et lineis fuscis superne, utrinque, et sæpissime subtus fasciatus.

Form slender, much less depressed than usual in the genus, back granular with many elongate subtrihedral tubercles, all of equal size and smaller than the ear opening, and arranged in distinct longitudinal rows, the two central rows being the best marked. Tail round, but slightly depressed at the base, and not at all farther back, tapering, without any enlarged or spinose tubercles whatever, this being clearly, I think, not due to reproduction, as it is constant in four specimens, three of which have perfectly well developed tails: subcaudal scales hexagonal, broad. The scales of the top and sides of the tail simply subimbricate, not in rings. Toes elongate, not webbed, the plates beneath them narrow and undivided at the base, broader and double towards the tips. Upper labials usually 9; lower 6 to 7, generally 7; the hinder 3 labials small. The rows of scales across the belly are about 24 in number, but they pass so gradually into the granular scales of the sides in most specimens, that it is very difficult to count them. Ear opening small, pupil of eye vertically oval, nearly as broad as high in some cases, edges deeply waved. No femoral pores, 6 præanal in a curved or angulate line with the convexity directed forward. Colo-

ration dirty grey, whitish beneath, head and back elegantly marked with black spots, often subquadrangular, which form bands, especially down the sides of the back. A pale line runs from the nostril down each side of the back and along part of the tail, below this the sides are marked with longitudinal dark lines, broader above than below, and in some specimens there are narrow rather faint dusky lines along the belly; tail more or less longitudinally striped throughout. Length 3 inches; of which the tail is  $1\frac{3}{4}$ .

This species has a smooth tail like *Hemidactylus (Leiurus) Berdmorei*, Blyth, and two allied species, described by Theobald, but in those forms there are no enlarged tubercles on the back, and they are of the usual broad depressed shape, not slender like *H. gracilis*.

*Loc.* I only obtained four specimens of this new form, two from S. E. Berár and two from near Raipur.

15. *Hemidactylus marmoratus*, sp. nov. Pl. xvi, Figs. 1-3.

*H. robustus*, dorso minute granulato, lateribus serie unicâ longitudinali tuberculorum distantium planulatorum ornatis, cauda depressa annulata, tuberculis elongatis squamæformibus utrinque duobus vel tribus ad latera annulorum singulorum armata, scutis subcaudalibus magnis, poris femoralibus utrinque circa 12, intervallo præanali lato disjunctis, digitis omnibus unguibus præditis: superne griseus, fusco-marmoratus, subtus albescens. Long. circa 3.3, corporis 1.85, caudæ nuper renovatæ 1.5 unc.

Habit stout as in *H. maculatus*. Back uniformly granular, sides with one sub-distant series of very small flat tubercles from thigh to shoulder, and a few others irregularly scattered about the loins, all very inconspicuous. Tail depressed, distinctly ringed, each ring with one large scale shaped tubercle behind at each side of the base, and one or two others, rather smaller, above, but none on the top. Subcaudal scales very broad. Femoral pores 12 on each side, separated by a broad space in front of the anus. Scales of the abdomen in about 38 rows. Upper labials 11-12, lower 7-8. Two pairs of enlarged chin shields, the first irregularly pentagonal and truncated behind, the hinder pair much smaller. Ear opening rather large. Pupil narrow, vertical edges deeply waved.



Fingers with broad divided plates below, and all provided with distinct well developed claws. Grey above, marbled with dusky, a dusky band running from behind the eye to the shoulder.

This is a fifth species found in India or Ceylon of the group to which *Hemidactylus Coctæi* belongs, characterized by the absence of enlarged tubercles on the back. They may be differentiated as follows :—

I. Enlarged chin shields present.

a. Claw on thumb minute or wanting.

\* Femoral pores numerous in a continuous row.

1. *Hemidactylus sublævis*, Gray.

\*\* Femoral pores 6 or 7 on each side, interrupted in front of the anus. Tail with scale like tubercles at the side.

2. *H. Coctæi*, D. and B.

b. Thumb claw well developed.

\* Rows of scales across belly about 45.

3. *H. Kelaartii*, Theobald, Cat. Rept. J. A. S. B., 1868, Pt. II., p. 29.

\*\* Rows of scales about 38.

4. *H. marmoratus*, sp. nov.

II. No enlarged chin shields.

5. *H. aurantiacus*, B e d d.

*H. Kelaartii*, Theobald, which is very near the present species, is also distinguished by its more numerous femoral pores, but this is not so good a character as that of the scales on the belly. It is a very much larger form, measuring 5·2 inches of which the tail is 2·5. From the shape of my specimen, I have no doubt of its being adult.\*

*Loc.* Only a single specimen of *H. marmoratus* was obtained in S. E. Berár, near Chánda. It was found in my tent.

16. CALOTES VERSICOLOR, D a u d.

This lizard appears to me far less abundant in the portions of Central India which I have traversed than it is in Bengal or Madras. Although a tree lizard, it is by no means common in

\* *H. Bellii*, Gray, Cat. Liz Brit. Mus. p. 155, of unknown locality, is closely allied, but appears to have a more spinose tail, and differently shaped chin shields from the present species.

forest, it appears to keep much to thin bush, and frequently to haunt rocky places.

The variety common about Chánda and S. E. Berár has a yellow band down each side of the back, which disappears in large specimens.

17. *SITANA PONDICERIANA*, C u v.

*S. minor*, G ü n t h e r, Rept. Brit. Ind. p. 135.—S t e i n - d a c h n e r, Reise der Novara, Zool. Theil., Reptilia, p. 26.

Although it is possible that there are two distinguishable forms of *Sitana* in India, one much larger than the other, I doubt greatly whether the proportions of the legs, which have been mainly depended upon by G ü n t h e r, when pointing out the differences, are sufficiently constant to enable them to be used as specific characters. If they really be so, I should have to describe two new species, as I have obtained two forms, both of which differ somewhat in the proportions of their limbs from the two species discriminated in G ü n t h e r's Reptiles of British India. If they are not, and I shall give some measurements which will shew a considerable amount of variation, then the only difficulty in identifying the smaller Southern form with *S. Pondiceriana*, Cuv., disappears. As the lizard abounds in Southern India, it is far more probable that C u v i e r's specimens were obtained from the neighbourhood of Pondicherry than that they were captured in the Northern Deccan,\* whilst D u m e r i l and B i b r o n had palpably, I think, specimens both from the North and the South, and their description is very probably taken from a Northern individual.†

G ü n t h e r describes his *S. minor* as having the forelimb extending beyond the vent if laid backwards, the hind limb to or beyond the extremity of the snout, if laid forwards; the lower thigh, he adds, is considerably shorter than the foot, the length of which is more than the distance between the shoulder and hip joints. Now I have collected between 30 and 40 specimens

\* I have not access to C u v i e r's original description.

† The figure in Jacquemont, Voy. dans l'Inde, Atlas, pl. 10, is that of the Northern variety, and D u m e r i l and B i b r o n mention Jacquemont's specimens amongst those in the Paris Museum.

from S. E. Berár, Chánda and throughout the country extending thence to Chota-Nágpúr, and although all of them, I believe without exception, have the hind limb sufficiently long to extend to the end of the snout, or beyond it, the latter being more common, the fore limb very rarely extends to the vent; out of the whole number, I can find only one specimen in which the fore foot laid back extends beyond the vent. I have not a single specimen exceeding 7 inches in length, and the majority are under 6. Precisely in accordance too with J e r d o n ' s account J. A. S. B., XXII, p. 473, I find the dewlap-like gular appendage comparatively slightly developed, never much exceeding half an inch in length,\* and in only one specimen is it tricolored; in general, even in May, it was scarcely distinct in colour from the remainder of the throat; but the male had always, late in the season, an indigo stripe from the chin to the front end of the pouch. Specimens of the larger form which I have seen in previous years usually had the pouch fully coloured in April.

I find that specimens in the Indian Museum from Ceylon agree with those collected by myself in every character, they have the same leg proportions, and they also resemble mine in some peculiarities of the scales to which G ü n t h e r does not refer in his description. About eight to ten rows of scales in the centre of the back are much larger than the scales of the sides, but a few large scales, the number varying greatly, are usually interspersed amongst the latter.† A few large, strongly keeled, almost spinous scales are also distributed over the occiput. Specimens occur, however, without these enlarged scales.

The following measurements of my own specimens and of two from Ceylon in the Museum will serve to shew the proportions of different parts of the hind legs and of the body. The three specimens from S. E. Berár were captured in the same spot. The dimensions are in inches.

\* It perhaps becomes larger, later in the year, in the breeding season.

† The larger size of the dorsal scales appears to be shewn in G ü n t h e r ' s figure.

Loc.	Whole length.	Lower thigh.	Hind foot.	Thigh to shoulder.
1 S. E. Berar,..	6·7	0·6	0·75	0·8
2 ditto, ....	5·8	0·5	0·7	0·7
3 ditto, ....	5·0	0·5	0·7	0·55
4 Raipúr, ....	6·25	0·65	0·8	0·75
5 Ceylon, ....	7·5	0·75	0·95	1·95
6 ditto, .....	5·0	0·6	0·8	0·85

It will be seen that whereas the proportion between the lower thigh and the foot is nearly constant, that between the limbs and the body varies greatly.

*Sitana Pondiceriana* is found in open country, amongst bush jungle, and in forest, but is perhaps most commonly seen in thin tree jungle. I not unfrequently met with it even in the great sál (*Shorea robusta*) forests between Biláspúr and Chota-Nágpúr. It is purely a ground lizard, as has already been shewn by J e r d o n. It is very abundant, being perhaps the most generally spread of all lizards inhabiting the Indian peninsula, and I have seen thousands, but I never yet observed one on a tree in the position depicted in G ü n t h e r ' s Reptiles of British India, Pl. XIV, fig. A. It is quite as great a mistake to represent *Sitana* in this position, or indeed upon a tree at all, as it would be to draw a *Euprepes*, a plover or a hare in the same position, and Dr. G ü n t h e r might have avoided this mistake by attending to Dr. J e r d o n ' s description of the animal's habits.

*Loc.* As already mentioned *Sitana Pondiceriana* abounds in S. E. Berár, throughout the southern part of the Central provinces in the districts of Chánda, Bhandára, Raipúr and Biláspúr, and in the country west of Chota-Nágpúr.

#### 18. SITANA DECCANENSIS, J e r d o n.

*S. Pondiceriana*, G ü n t h e r, Rept. Brit. Ind. p. 135; D u m. et B i b r o n, IV, p. 437, partim.

I did not obtain any specimens of this large form during the past season, but I find some amongst my former collections from Nágpúr and Chánda, and I believe one of these at least was from near Chánda, where it probably meets the range of the smaller

race. These specimens shew precisely the same proportions of the limbs as I find usual in the smaller race, the hind foot laid forward extends just beyond the snout, while the fore limb laid back does not reach, or, at the most, just reaches the vent. The dorsal scales are enlarged, but there is an absence of enlarged scales on the sides, and although one or two occur on the occiput, they are much less distinct and less numerous. The gular pouch is well developed, being  $1\frac{1}{2}$  inches long at its union with the throat and head, or nearly three times as long as in the smaller race, but as I have previously stated, I am not sure that I have a specimen of the latter with a fully developed pouch. The following are the dimensions of the three larger specimens.

	Whole length.	Lower thigh.	Hind foot.	Thigh to shoulder.
1	8.25	0.9	1.2	1.25
2	7.25	0.8	1.15	0.9
3	imperfect	0.9	1.22	1.1

The weight of the body must be far more than double that of the smaller specimens.

There is evidently very little difference between these forms of *Sitana* except size, as will be seen from the preceding details. I have obtained specimens of both races which, agreeing with each other, differ from both the forms described by Günther in the length of the legs. I shall endeavour to procure further specimens, and to decide if all these varieties pass into each other by insensible degrees, or whether there are really two races distinguished by the marked difference in size. The former appears to me the more probable at present.

#### 19. CHARASIA DORSALIS, Gray.

A fine rock lizard which I found abundantly in parts of Central India puzzled me greatly. I could not conceive it probable that so conspicuous a species had escaped notice, but nevertheless no generic description in Günther's Reptiles would apply to it. In all but one character it agreed with *Charasia dorsalis*, but that character, the arrangement of the scales on the tail, is mentioned by Dr. Günther as one of the principal distinctive marks, and

I find it also employed by Dr. Gray (Cat. Rept. Brit. Mus. p. 231) in characterizing the genus, the scales of the tail being said to be arranged in rings. In my specimens, on the contrary, the caudal scales are unmistakably imbricate, as much so as in *Calotes versicolor*. In the very careful and detailed description in Dumeril and Bibron,\* IV, p. 486, not a word is said of rings on the tail, nor is this character mentioned by Dr. Jerdon, Cat. Rept. J. A. S. B. XXII, p. 475, and in specimens from the Nilgiris, formerly presented to the Society's collection by Mr. Theobald, I find that although the caudal scales are partly in rings, the annulation is often ill-marked and irregular and never appears to resemble the very characteristic arrangement seen in *Stellio*. Major Beddome also, to whom I wrote on the subject, informs me that in specimens in his possession the scales on the tail are subimbricate. I conclude that this character is variable, and that the individual specimens in the British Museum described by Drs. Gray and Günther exhibit it in a more marked manner than usual.

The genus *Charasia* is in fact little more than a sub-genus of *Agama*, distinguished by the absence of præanal pores.† It is one of the forms with African affinities which are so common and widely spread in India proper, and which serve to distinguish its fauna from that of the countries lying east of the Bay of Bengal.

The coloration and habits of *Charasia dorsalis* have been well described by Dr. Jerdon l. c. I have repeatedly seen and secured specimens with the head a brilliant scarlet above and on the sides, a black streak from the nostril through the lower eyelid and over the tympanum passing into the black of the sides of the neck, chin red marbled with dusky, just as in *Stellio cyanogaster* blue and grey are intermingled, back dull rufous becoming ashy behind and slightly mottled with grey and dusky, sides, belly and limbs blackish excepting some orange spots along the sides.

These brilliant colours are seasonal and confined to the males as

\* I am equally unable with Dr. Gray, Cat. Rept. Brit. Mus. p. 246, to find anything corresponding with the "6 à 10 écailles crypteuses de forme rhomboidale" said by M. M. Dumeril and Bibron to occur in male specimens on the edge of the anus, and to be arranged in oblique and crossed series.

† I recently described an *Agama* (*A. annectans*) from Abyssinia with the caudal scales in rings (Obs. Geol. & Zool. Abyss. p. 446.)

in *Calotes versicolor*, and I observed them at the same time of year, in May. At other times of the year the coloration in the living animal is brownish grey, with irregular blackish marks on the sides and back, those on the latter having sometimes an imperfect lozenge shape, and with dark cross bands on the upper part of the tail.

*Charasia dorsalis* is rarely seen except on high rocks, and is especially met with on hills of granitoid gneiss, which usually consists of enormous detached blocks piled upon each other. I did not find it on the sandstone hills of Biláspúr, although they have precipitous sides. I have found this lizard both in forest countries and in open places, but always with the same habitat. It not unfrequently, if pursued, takes refuge on a tree. I obtained specimens chiefly by shooting them, as the localities they inhabit are frequently rather difficult of access and abound in narrow clefts, into which these lizards escape. I once saw one with a large green beetle, a *Cetonia*, in its mouth.

The largest specimen obtained by me is  $9\frac{3}{4}$  inches long, of which the tail measured from the anus is  $6\frac{1}{2}$ . The nostril is a little farther back than in Nilgiri specimens, but the difference is trifling.

*Loc.* I have seen this lizard once, I believe, in S. E. Berár where it is certainly very rare, probably because no suitable habitat exists. I found it common on a rocky hill about 60 miles west of Raipúr, and abundant thence to the eastward, in suitable places, in Chhatisgarh, Udipúr and Jashpúr, and near Ránchi and Hazáribágh. I have also met with it, I believe, in former years, near the Godavery.

#### OPHIDIA.

##### 20. TYPHLOPS BRAMINUS, D a u d. var. PAMMECES.

*T. tenuis* G ü n t h. Rept. Brit. Ind. p. 176, Pl. XVI, fig. C.  
*T. pammeces*, id. app.

A single small specimen was found under a stone. It is nearly six inches long and about three millemetres or barely one-eighth of an inch thick, so that the thickness is little more than one-fiftieth of the length. The rostral shield is considerably narrower in front than behind, but the general form of the head shields is the same

as in *T. braminus*, there is the same number of longitudinal rows, twenty, (I leave the counting of the transverse rows to any one who may find the occupation congenial), and the thickness of the body is evidently a very variable character. I do not think that the form should be distinguished from *T. braminus*.

*Loc.* S. E. Berár.

21. TROPIDONOTUS QUINCUNCIATUS, S c h l e g.

Var D. G ü n t h. Cat. Col. Snakes Brit. Mus. p. 65.—? var.  $\delta$ . Rept. Brit. Ind. p. 261.

*T. piscator*, J e r d o n, Cat. Rept. J. A. S. B., XXII, p. 530.

I obtained two large specimens, a male and a female of this common snake, from beneath a large stone in a stream. They evidently lived in the place, and when dislodged shewed a great disinclination to quit the water. I found them to be provided with perfect nasal valvules; they were so large and so unlike ordinary specimens of *T. quincunciatus* in colouring that at first I mistook them for *Homolopsidæ*.

The largest was a female measuring 51 inches in length, of which the tail was 11.5. Her colour was olive marbled with black and an indistinct row of small pale yellowish spots on each side of the back from the head to the anus. Ventral scales 148, subcaudals 61. The smaller was a male, 38 inches in length, of which the tail was also 11.5 or the same length as that of the much larger female, with 143 ventral scales and 89 subcaudals. Its colour was olive without any dark marks, but with a row of well marked small buff spots down the sides. In both specimens the black lines from the eye to the upper labials were very ill-marked; the lower parts were white with a slight pinkish or orange tinge.

The stomach of the female was empty, that of the male contained small fish. In the oviducts of the former I counted 85 soft partly developed eggs.

A smaller specimen obtained afterwards at Korba, on the bank of the Hasdo river, had precisely similar coloration with the male specimen above described. It had 158 ventral and 81 subcaudal shields.

*Loc.* S. E. Berár and Bilaspúr.



22. *PTYAS MUCOSUS*, (L.)

The common rat snake appears to me to be much less common in the Deccan proper, west of Nágpur, than it is to the eastward. This snake attains a greater size than that given by G ü n t h e r, I shot one this year 7 feet 7 inches long, of which the tail was 2 feet 1 inch. The ventral shields were 197, subcaudals 124.

On another occasion I saw a *Ptyas mucosus* seize and commence to swallow a large *Calotes versicolor*. When my attention was first attracted, the snake was fairly pursuing the lizard at full speed along a sandy path. Presently both stopped, the snake made a slight movement and in an instant had the head of the lizard well within his jaws and his body thrown over that of his victim.

Loc. Central Provinces, Chota-Nágpur &c.

23. *ZAMENIS* (?) *BRACHYURUS*, G ü n t h e r.

Ann. and Mag. Nat. Hist. 1866, Ser. 3., Vol. XVIII, p. 27, pl. vi, figs. A. A.

A small snake, which I captured on the ground in thin tree jungle, proves to belong to this rare species, though it differs so much in appearance from other Indian forms of *Zamenis* that I was inclined to look upon it as a species of *Coronella*. The specimen measured when captured  $21\frac{1}{2}$  inches, of which the tail is 3 inches only. Ventrals 213, subcaudals 53. It agrees very well with G ü n t h e r's description. In the fresh specimen the coloration was almost uniform, olivaceous above and whitish below, in spirits an indistinct marking becomes more apparent, the anterior portion of the scales in the front part of the trunk being paler than the remainder, and the ventral scales have a dark hinder border. The last maxillary tooth is very little if at all larger than the preceding, and although, on one side of the jaw, it is separated from the latter by an interspace, this is evidently due to loss, as, on the opposite side, the distances between all the teeth are regular. If perfect, there would probably be about 10 or 12 maxillary teeth on each side of the jaw.

The back is somewhat compressed and almost keeled towards the tail, the scales are perfectly smooth, in 23 rows, and the anal undivided, as in the British Museum specimen.

Loc. S. E. Berár, near Wún.

24. *DENDROPHIS PICTA*, (G m.)

A single specimen procured has 196 ventral and 135 subcaudal shields, the number of the former being considerably greater than usual. The coloration is also a little different from that given by Günther. The whole of the upper surface in brown, paler in the middle of the back. Ventral portion white with a slight dusky band along each side just about the edges of the ventral scales. Some black irregular spots on each side behind the head.

*Loc.* Jashpúr, W. of Chota Nágpúr.

25. *PASSERITA MYCTERIZANS*, (L.)

A specimen 44 inches long is a female containing 4 large eggs. Ventrals 194, subcaudals 148.

*Loc.* Korba, Biláspúr. This is I fancy nearly as far to the westward as it is found in Central India. I have never noticed it near Nágpúr, in Berár, or in the western portion of the Nerbudda valley. In Bengal and Orissa it is one of the commonest snakes. It is also found in the western ghats near Bombay,\* P. Z. S. 1869, p. 502.

26. *LYCODON AULICUS*, (L.)

The only specimen obtained belongs to the var  $\delta$  of Günther's Reptiles, ferruginous brown with yellowish white cross bands on the back. Ventrals 205, subcaudals 66.

*Loc.* Udipúr, west of Chota Nágpúr.

27. *NAJA TRIPUDIANS*, M e r r.

All the specimens I have seen in the Chánda and Nágpúr country as well as those in Berár and throughout the Deccan have the

\* I would here call attention to the evidence afforded by the list of reptilia l.<sup>o</sup>c. collected by Dr. Leith of the occurrence of Malabar forms of Reptiles in the hills near Bombay. Amongst the species enumerated from Mahableswar and Matheran are *Gymnodactylus deccanensis*, *Calotes Rouxii*, *Silybura macrolepis*, *Cynophis malabaricus*, *Trimeresurus gramineus* (an Indo-Chinese form) and *Hylorana malabarica*. With the exception of *Calotes*, I am not sure that any of the above genera even have been found in the Deccan proper, that is, the open country between the Western Ghats and Nágpúr. Sykes did not distinguish the two well marked faunas on the edge of which he collected. I have already shewn (J. A. S. B. 1869 Pt. II, pp. 178 and 184 &c.) that many Malabar birds range northward along the Western Ghats in the same manner as the reptiles are now proved to do, and as is the case with land-shells.

double ocellus or "spectacle mark" more or less well developed. I have not myself seen the common Lower Bengal and Burmese form with the single large ocellus on the neck in Central India.

28. *BUNGARUS CERULEUS*, (S c h n e i d.)

A female of this much dreaded snake was brought to me at Korba in Biláspúr. It contained 9 eggs, each above an inch long, enclosed in a cartilaginous skin. Length of the snake 35 inches, of the tail 3½.

29. *DABOIA RUSSELLII*, (S h a w.)

Although not abundant I have seen this snake in S. E. Berár, and also near Bétúl. It is a sluggish animal; a friend once told me he had carried one home under the belief that it was a young Python, the markings not being much dissimilar; it made no attempt to injure him, and he was only undeceived by one of his dogs being bitten and quickly killed by the snake.

*Class AMPHIBIA.*

30. *RANA CYANOPHYCTIS*, S c h n e i d.

Extremely common in tanks, keeping in the water or on the edge. My largest specimens are less than 2 inches in length, but I have seen some a little larger.

*Loc.* S. E. Berár, Chánda, Raipúr. I did not see this frog in the country east of Biláspúr where there are no large tanks.

31. *RANA GRACILIS*, W i e g.

Equally common with the last in Chánda and Raipúr. It keeps more in marshy ground at some distance from the water's edge.

G ü n t h e r mentions that specimens of this frog received from Madras have the hind legs a little longer than examples from Indo-Chinese countries. I find them in frogs from the Central Provinces to be considerably longer than the dimensions said to prevail usually, instead of the distance from the vent to the metatarsal tubercle being equal to that of the body or a little more, it exceeds the latter in a proportion varying in different specimens between 6:5 and 10:9. I did not obtain a single example exceeding 1·3 inches in length of body. The coloration varies greatly, usually it

is olive or brownish olive with large irregular dusky transverse bands on both body and limbs. Sometimes there is a pale yellowish or pinkish streak down the back, and this varies from a narrow line to a band one-third the breadth. All these variations may be found around the same tank. As a rule specimens with the pale dorsal line are much rarer and more local than those uniformly colored.

*Loc.* Chánda, Raipúr &c., in all damp places. I believe I met with this frog in Chota-Nágpúr also, but I can find no specimens amongst those collected.

### 32. PYXICEPHALUS BREVICEPS, (S c h n e i d.)

I obtained a single specimen of this frog, apparently young. It measures 1.5 inches from nose to vent, the hind leg from the vent to the end of the toes being just over 2 inches long. The coloration differs considerably from that given by G ü n t h e r, there being no trace of a yellow dorsal band. The following description was taken from the living animal.

Upper parts yellowish brown (greyish in spirits) with a transverse dark mark between the hinder part of the eyes and some blackish patches in front of them and around the nostrils, the back with small imperfect black rings, some of which behind the shoulders are arranged in an arc with the convex side in front, others are irregularly scattered; sides of body and the thighs before and behind mottled with yellow; the limbs with some transverse dusky marks, and dusky patches on the sides of the chin; rest of the lower parts white except under the thighs where the skin is flesh coloured.

The abdomen and back part of the thighs are granular, the back and the remainder of the body smooth. Maxillary teeth very small scarcely perceptible, vomerine teeth separated from the choanæ by a wider space than from each other.

*Loc.* Udipúr between Chota-Nágpúr and Biláspúr.

### 33. CALLULA PULCHRA, G r a y.

A single young specimen about an inch long was found under a large stone. The toes are absolutely free, but this is very proba-

bly due to immaturity, as it appears to differ in no other respect from larger specimens. The tongue is slightly notched behind and grooved above. The skin is perfectly smooth; colour brown above irregularly spotted with ash grey, below whitish.

*Loc.* Bhandára district, Nágpúr division of the Central Provinces.

34. POLYPEDATES MACULATUS, (G r a y.)

I found a few specimens mostly amongst bushes or grass by the sides of rivers. The largest procured measures 2.3 inches from nose to vent, hind leg from vent to end of toes 3.8 inches. In a small specimen the same measurements are 2 and 3 inches respectively. The following is a description of the coloration of fresh specimens.

Upper parts ochreous yellow, yellowish brown or chocolate, an indistinct dusky mark, often nearly obsolete, between the eyes, and transverse dark bands on the back of the limbs, occasionally some indistinct dusky blotches on the back also, but none of these are very constant, a dark band runs from the nostril to the eye and a broader one from behind the eye through the tympanum to above the shoulder; before and behind the thigh, and the hinder part of the side flesh coloured with large yellow spots; lower part of the limbs and belly pinkish white.

The skin is smooth above; there are fine, close, granular tubercles throughout the abdomen and the lower and hinder sides of the thighs.

The vomerine teeth are in very short rows widely separated from each other in the middle.

*Loc.* Eastern part of Chánda, Biláspúr, Udipúr.

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